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Pinus banksiana Lamb., Jack Pine, Gray Pine

This most northern of all North American pines is a short-lived tree of extremely variable habit whose range reaches to within one and a half degrees of the Arctic Circle, extends some 1600 miles to the south and spreads 2500 miles from east to west. Although generally regarded as an inferior species, the Jack Pine has attained some economic status by reason of its role as a pioneer in the reforestation of land denuded by fire or lumbering operations.

Scrubby and dwarfed in the northern parts of its range, where it inhabits the most barren and unpromising sites, it will in better soil, develop into a tree of some picturesqueness. Twenty-five to sixty feet is its usual height range, with the greatest growth occurring during its first twenty-five years. It is more symmetrical in habit then, too, showing a bush-like compactness which later gives way to the irregularity induced by its crooked, widely divergent branches. The young branchlets are yellowish to purplish-brown and not glabrous.

One of the surest ways of identifying the Jack Pine is by its short ($\frac{3}{4}$ to $1\frac{1}{2}$ inch), flat, twisted needles clustered in pairs toward the ends of the branches. The resultant effect is one of sparseness, even though the needles persist for two or three seasons before shedding. Their summer color is bright green, but in this area winter brings on a dingy yellowish appearance.

Precocious in its blooming habits, it is not unusual for a Jack Pine to come into flower when only six or eight years old. The crowded clusters of yellow, pollen bearing flowers appear in early spring at the tips of the past season's growth; the dark-purple pistillate ones in clusters of two to four on the sides of the shoots of the upper branches. From the latter develop the non-prickly, lop-sided cones, incurved like a ram's horn, about an inch thick and from one and a half to two inches long. They all point toward the tip of the twig, an arrangement peculiar to this species. The cones are noted both for their persistence, as well as

for their tendency to remain closed for several years. Even after the winged, brownish-black seed has been expelled, the cones themselves may cling for a decade or longer.

While there is nothing particularly outstanding about Jack Pine bark, it may be mentioned that on mature trees it is thin, dull red-brown, and broken into narrow ridges of close fitting scales.

Of the three pines indigenous to Illinois, this species has the least to offer ornamentally. As has already been mentioned, however, it is a tree of considerable value for planting in sandy areas where it is difficult to get anything else to grow.



Pinus banksiana Lamb., Jack or Scrub Pine, in the Morton Arboretum
Pinetum

Pinus virginiana Mill., Virginia, Jersey or Scrub Pine

In spite of the rather uncomplimentary name, "Scrub," by which it is most commonly known, this small, bushy, spreading-branched pine performs a number of useful services. On dry hills and bluffs it both prevents and controls erosion, and in abandoned fields of low fertility it quickly helps reestablish a forest cover. In such locations it serves as a nurse crop for more valuable trees. Economically its wood is of value for pulp.

Growing from sea level to 3000 feet over a range extending southward from Long Island to Central Georgia and westward to Southern Indiana and Western Kentucky, it reaches largest size on the low hills of Indiana, where heights up to one hundred feet and trunk diameters of three may be reached. A thirty or forty foot tree is considered average size throughout most of its range.

Young trees tend to be pyramidal, but as they age their crowns become flat-topped, open and often straggly. They are almost always short trunked. The branches are slender, inclined to be horizontal, and arranged in irregular whorls. The purplish, waxy bloom evident on the slender young shoots is the most distinctive characteristic of this tree and the feature distinguishing it from other two-needled pines. Resinous winter buds with appressed scales are another ear-mark, although those of the Jack Pine also show this feature.

For further clues to identification examine the closely arranged needles. They are slightly longer than those of the Jack Pine, (varying from $1\frac{1}{2}$ to 3 inches), sharp pointed and twisted, but usually less divergent. Their coloring is a richer green of slight bluish cast. And, like the Jack Pine, they are shed irregularly every three or four years.

Flowering takes place in early spring when the yellowish-brown male inflorescences located at the base of the new growth release their pollen onto the purplish pistillate flowers appearing like small, prickly cones on the same branches. They are borne singly, in pairs or in whorls throughout the crown. Symmetrical, conic-ovoid to oblong cones follow, taking two years to mature. They are two to three inches long, bright reddish-brown and prickly, for each scale bears a persistent spine, sharp to the touch. The freely borne seeds germinate readily.

Virginia Pine bark does not differ appreciably from that of Jack Pine, being reddish-brown, thin and shallowly fissured into scaly plates. On the branches it is smooth.

Several attractive specimens of this fast growing pine may be seen in the Pinetum to the east of the Arboretum Center, out of range but thriving.

E. L. Kammerer



Pinus virginiana Mill., Virginia, Jersey or Scrub Pine. Even though considerably north of its normal range, representatives of this species are doing well in the Arboretum Pinetum.

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